

Development of Undergraduate and Graduate Nuclear Instrumentation and Simulation Laboratories

Executive Summary

This proposal develops a new nuclear instrumentation and nuclear simulation laboratory for graduate nuclear engineering and medical physics students. The proposed curriculum will improve student understanding of radiation interactions with matter, nuclear instrumentation, radiation survey techniques, radioactive material handling procedures, and radiation simulation techniques. Such knowledge is crucial to successful careers in nuclear engineering and medical physics. The curriculum will supplement current didactic course offerings. In the labs, student learning will be solidified by hands-on laboratories with both research-grade and field-grade nuclear instrumentation. The graduate-level lab will be supplemented with Monte Carlo simulation techniques to enable in-depth understanding of the laboratory experience. Modules will be developed for both a student laboratory setting and for workplace environment settings, where students will perform NRC mandated tests. The training and experience offered by some lab modules will provide a direct forum for preceptor attestation of student skills. The proposal directly addresses NRC's need to have a competent workforce of nuclear engineers and medical health professionals who work with NRC regulated materials.

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